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*Published in:*  
Bocconeia

*Publication date:*  
2007

*Document version*  
Publisher's PDF, also known as Version of record

*Citation for published version (APA):*  
Tan, K., Stevanovic, V., & strid, A. (2007). Distribution and centres of diversity for endemic geophytic Monocots in the Balkans. *Bocconeia*, 21, 139-146.

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## Distribution and centres of diversity for endemic geophytic Monocots in the Balkans

### Abstract

Tan, K., Stevanović, V. & Strid, A.: Distribution and centres of diversity for endemic geophytic Monocots in the Balkans. — *Bocconea* 21: 139-146. 2007. — ISSN 1120-4060.

It is well known that the life form of a geophyte is admirably adapted for dwelling in arid and semi-arid habitats and that the ephemeral occurrence or temporal use of ecological niches in such habitats is a specific survival strategy to avoid unfavorable conditions such as drought and competition. The extremely rich endemic flora of the Balkan Peninsula is represented by several life forms and it is estimated that geophytes account for at least 10% of this flora. The majority of taxa (numbers in parentheses) belongs to the Monocot families *Liliaceae* (incl. *Alliaceae*, 124), *Iridaceae* (28), *Orchidaceae* (still unknown), *Amaryllidaceae* (5) and *Araceae* (8) which have all members geophytic. One of the most important centres of a geophytic flora is the Mediterranean region including the adjacent mountainous areas. The Balkan Peninsula is a significant centre of diversity for endemic geophytes both in terms of origin and speciation. The distribution of c. 175 endemic geophytic Monocots (excl. *Orchidaceae*, *Gramineae* & *Cyperaceae*) in the Balkans was mapped using 50x50 km UTM squares. The data permitted correlations of distribution with several interesting topics such as morphology, phenology, altitudinal range, island isolation and centres of diversity.

### Introduction

As part of an on-going project: Mapping the endemic flora of the Balkans, initiated and carried out by V. Stevanović, K. Tan & A. Petrova (Stevanović & al. 2003, 2004), together with collaborators, some attention was devoted to an analysis of the life forms of endemics in the Balkans together with their distribution.

The predominant life form of the endemic Balkan flora can be assigned to the 'hemicryptophyte-chamaephyte' category (Mueller-Dombois & Ellenberg 1974) with a significantly high percentage of geophytes. We define the latter as plants with distinctly swollen, enlarged underground storage organs. The recorded number of endemic geophytes is approximately 260, representing c. 10% of the estimated endemic flora. The Monocots dominate, particularly the families *Liliaceae* (incl. *Alliaceae*) and *Iridaceae*. The present analysis caters only for those geophyte families which have been mapped. These families are the *Liliaceae*, *Iridaceae*, *Amaryllidaceae* and *Araceae*, while